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# Cinematographer

★ THE MOTION PICTURE CAMERA MAGAZINE ★



In This Issue . . . . .  
ORTHICON PICKUP TUBE  
FOR TELEVISION CAMERAS



JANUARY  
1946



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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 27

JANUARY, 1948

NO. 1

## CONTENTS



Orthicon Pickup Tube for Television Cameras	6
Printers on Use New Ansco 16 mm. Color Film	7
Automatic Follow Focus Devices for Use in Cinematography, By JAMES T. STUBBS and WILLIAM G. HICKMAN	8
Axis of the Camera (Feverell Merley, A.S.C.) — By HILDA BLACK	10
Sixteen Goes Hollywood — By RAY FETTERBERG, A.S.C.	12
Review of the Film News	14
No Cherry Blossoms in a Factory — By WALTER WILK	16
Among the Movie Clubs	20
Fitting Film to Music — By HAROLD RAWLINSON	22
Using Your Movie Camera as a Motion Picture Stop Printer, By JAMES E. OSWALD	24
Current Assignments of A.S.C. Members	28

ON THE FRONT COVER is a photograph on the set of Monogram's production, "Suspense"; with Director Frank Tuttle and Director of Photography Karl Struss (in center) checking clapper of Belita and Harry Sullivan before the cameras roll. Photo by Clifford Kling.



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ECA television camera equipped with new Image Orthicon giving tube of extreme sensitivity. The Orthicon camera picks up dim lighting conditions—in this case only a mechanical counter-clockwise lighting fixture in transmission in any degree of increased brilliance.

## Orthicon Pickup Tube for Television Cameras

A NEW television camera tube of revolutionary design and sensitivity emerged from wartime secrecy for exhibition by Radio Corporation of America in a series of studies and remote pickups in which it not only transmitted scenes illuminated by candle and watch light but performed the amazing feat of picking up scenes with infrared rays in a blacked-out room.

The new tube, known as the ECA Image Orthicon, was demonstrated recently in a studio of the National Broadcasting Company, Radio City, with the cooperation of NBC's engineering and production staff. In the exhibition, members of the audience saw themselves televised under lighting conditions to

demonstrate the super sensitivity of the new electronic "eye" which not only solves many of the major difficulties of illumination in television programming and makes possible "round-the-clock" television coverage of news and special events.

Further evidence of the tube's extreme sensitivity came in the transmission of scenes from a special radio show arranged at Madison Square Garden for the visiting United States Navy Fleet. Cowboy acts were picked up by the Image Orthicon and transmitter to the studio in a comparative demonstration displaying its advantage over conventional television pickup tubes in providing greater depth of perception and

clearer views under shifting light conditions.

ECA-NBC engineers illustrated the demonstration by blocking out the studio where the writers were assembled and providing the spectacle of picking up television scenes in apparent darkness. Under infrared (black) lights were turned on, but it was so dark that a number of the audience could not see the person next to him. Then as the screens of television receivers in the studio appeared bright images of a dancer and other persons who were in the room. The Image Orthicon tube, it was explained, achieved the feat through its sensitivity to the infrared rays.

### Aladdin's Lamp of Television

"This is the Aladdin's Lamp of Television," declared John F. Ryan, NBC Vice-President in charge of television. "It's revolutionary effect on lighting problems means that many of our major difficulties of illumination will be eliminated."

"This new instrument which is easily portable and suitable for use in every field of television opens new vistas that challenge the imagination. It assures television of 24 hour coverage, in daylight, twilight, or moonlight—in good weather and in bad."

Declaring the Image Orthicon to be 100 times more sensitive than conventional pickup tubes, E. W. Engstrom, Research Director of RCA Laboratories, explained details of the development of the tube. He noted that early models were built before the war as efforts of RCA television scientists and engineers to improve the quality of television transmissions. When war came, the armed forces found urgent need for television applications, and throughout the



Connected at the Orthicon tube is shown with length of 14 inches and diameter of two inches—half the length than a similar standard Orthicon tube will allow the manufacture of a smaller lightweight and more portable television camera.

conduct RCA research and development continued at an accelerated pace in response to military requirements. Many advances were made.

The Image Orthicon tube, for example, Mr. Engstrom said, emerged in its present form much sooner than would normally have been the case. A military secret until now, it can be revealed that it makes use of the most advanced results of more than twenty years of research not only in television pick-up tubes but in electron optics, photo-emission processes, electron multipliers, and special materials.

Amazing incorporation of the Image Orthicon in a new super-sensitive television camera to be manufactured by RCA Victor, Monte Burnett, General manager of the Company's Engineering Products Division, said that deliveries of the camera are expected to be made to television broadcasters in about six months.

"This equipment is especially well suited for televising events remote from the studio and those where brilliant lighting is either impracticable or undesirable," said Mr. Burnett. "The portable camera is lightweight, simple to operate, and can be quickly set up and placed in operation. It is particularly adaptable for use in televising out-of-door sports and news events and for remote mobile pick-ups such as in theaters, concert halls, schools, churches, courtyards, and other public buildings."

#### Advantages in Performance

RCA engineers listed these specific advantages in performance of the Image Orthicon.

1. Ability to extend the range of operations to practically all scenes of visual interest, particularly those under low-lighting conditions
2. Improved sensitivity, permitting greater depth of field and isolation of background that might otherwise be blurred
3. Improved stability which protects

(Continued on Page 27)

## Pointers on Use New Ansco 16mm. Color Film

ANSCO's 16 mm. color film became available generally throughout the United States during the past few weeks, with company announcement disclosing that production of the film permits distribution on virtually unrestricted basis to dealers. Limited quantities of the new 16 mm. reversible color stock were distributed in eastern states last year, and the broadened availability results from increased demands for the film by the armed forces.

For the time being, only 100 foot lengths of the daylight type film will be available, Ansco discloses, but within a few months other length rolls and the tungsten type film will be on the market. Processing charges are included in the purchase price of the 16 mm. color film, and exposed rolls have to be sent to Ansco main color laboratory in Binghamton, New York for such development, until processing labs are established at convenient points and it is expected that processing will be available on the Pacific Coast shortly after Feb. 1, 1946. Company also announces that duplicating service whereby extra prints can be struck off, will also be available.

#### Ansco's Information on Use

Despite the fact that 16 mm. Ansco color reversible film has a long scale of gradations and wide exposure latitude, it is important that correct exposure be given if best results are expected. Folder supplied with each roll of film will aid in determining correct exposure of the film, either by use of the exposure charts provided or when using a photo-cell type exposure meter. As a general rule, it is advisable to never use a smaller lens opening than f/11 when out-of-door exposures are made at 16 frames per second, regardless of how small a lens opening is indicated by the exposure meter, for experience has proven that even the lightest subjects under brightest sunlight conditions are underexposed.

at lens openings smaller than f/11. Unless great care is used in interpreting the reading of even the finest photo-cell type exposure meters inaccuracies may, and often do, result. According to Ansco the printed chart in folder provides with each roll has been found to produce consistent results under the condition given.

This chart discloses that—at normal shutter speed of 16 frames per second with the Daylight type film—best results will be secured as follows:

	Front	Side
	Lighted	Lighted
Bright Sunlight	f8	f8.6
Heavy Sunlight	f6.4	—
Soft Shadows	—	—
Sun Overcast	f4	—
No Shadow	—	—
Bright Day	—	—
Sun Overcast	f2.8	—
Dull Day	—	—

The above table is for use under average summer conditions in the temperate zone, from two hours after sunrise until two hours before sunset.

In winter, use next larger opening (one full stop) rather than that given in the table, provided there is no snow.

With exceptionally brilliant light, as in snowscapes, snow-covered or at high altitudes, the indicated exposure may be halved.

The exposures in the table are for medium subjects. Dark subjects require one-half stop greater exposure, while light subjects should be given one-half stop less exposure.

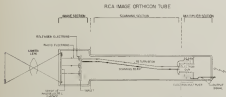
For best results, Ansco recommends the exposure of the daylight type color film only in direct sunlight. Products is balanced for use without filters under the normal and recommended conditions.

#### Hand Tests Possible

In a recent series of tests by Ansco technicians, it has been determined that short strips of 16 mm. Ansco color reversible film can be processed in a beaker or film tank to give an indication of correct exposure. It was observed that the density and color quality of the test strips processed by hand differed but slightly from that of film processed in the Ansco color laboratory. The practice of developing short strips of film to check exposure may prove advantageous at times if the individual realizes that similarly exposed film processed by Ansco may be slightly different in density and color quality from the home processed tests.

#### Procedure Where Duplicates Wanted

The 16 mm. Ansco color reversible film exposed with intention of having duplicates made on Ansco color film should be softly lighted so as to avoid extreme contrast because all duplicates exhibit somewhat higher contrast than the originals from which they are made. Films which have too dark shadow areas and extremely light, or even clear highlights are seldom satisfactory when duplicated because these extreme conditions are even more pronounced and annoying in the duplicate film.



#### HERE'S WHAT HAPPENS IN RCA'S NEW IMAGE ORTHICON, PICK-UP TUBE

This simplified horizontal drawing of the new RCA Image Orthicon, an ultra-sensitive television camera pick-up tube, shows how the tube's response to the light of a single candle, or even a match is built up to provide a signal which can reproduce images on home television screens. A light image from the scene (view of window left) is picked up by the camera lens and focused on the first electrode face of the tube, releasing electrons from each of thousands of tiny cells in proportion to the intensity of the light striking it. These electrons are directed as parallel column from the back of the tube to the target, from which each striking electron liberates several more, leading a pattern of approximately positive charges on the front of the target. When the back of the target is coated by the beam from the electron gun in the form of the tube, enough electrons are desorbed at each point to produce the positive charge, the rest of the beam returning, as indicated in a series of "electron multiple" stages or dynodes surrounding the working gun. After the returning "signal" beam has been multiplied many times, the signal is carried out of the tube to the television broadcast transmitter.

# Automatic Follow-Focus Devices For Use In Cinematography

By JAMES T. STROHM and WILLIAM G. HECKLER

(Captains, Signal Corps; Camera Branch, Signal Corps Photographic Center, Long Island City, N. Y.)

**I**N THE course of producing training films at the Signal Corps Photographic Center, Long Island City, New York, it was soon realized by the cinematographers attached to the Camera Branch that, in many instances, the type of photography required for training films, orientation films, morale films, etc., was somewhat different than the photography required for the production of entertainment films as normally produced in the major Hollywood studios. At the outset the production cameramen and special effects cameramen soon found that a great percentage of the Signal Corps productions required numerous shots of maps, diagrams, mock-up models, insets, transitions, etc. In so many shots of this type it was necessary to open the scene with a full shot of a map, diagram, or model, and then move the camera in to a specific point in

order to call attention to it or emphasize it. The reverse of this procedure was also often the case, where it was necessary to open the shot at a specific point and then move the camera back in order to encompass the entire object.

Many difficulties were encountered in an effort to photograph such shots with the required degree of accuracy. First of all, the Camera Branch was hampered by having only a few highly trained and consistent camera operators capable of operating the camera in these extremely difficult shots and also only a few assistant cameramen who had had enough experience in changing focus as scenes accurately. The procedure of accurately changing focus on a photographic lens while the camera is in motion is extremely difficult and requires a great deal of instruction and constant practice. It was found that inexperienced

camera operators were never sure if the object being photographed was in sharp focus through the entire length of the scene, and it was always necessary to rephotograph the scene several times with the hope that one of the "takes" would be in sharp focus.

Difficulties were also experienced with camera dolly "weaves" and vibrations, resulting from the human element introduced in starting and stopping the dolly and variations in the dolly tracks. For the same reason, acceleration surges were seldom absent. Also, accurate synchronization of in-and-out movements with up-and-down movements of the camera was seldom achieved.

It soon became apparent that it would be advantageous to construct some sort of device which would eliminate the human element not only in moving the dolly but also automatically changing the focus of the photographing lens during the periods when the camera was in horizontal movement. Research work was begun to accomplish this end and resulted in the development of the present all-electric and fully automatic camera dolly which is used at the present time by the Camera Branch at the Signal Corps Photographic Center.

The fully automatic electric dolly is an adaptation of a standard Baby camera dolly. (See Fig. 1). The two standard rubber wheels are retained on the left side, while the standard rubber wheels on the right side have been replaced with two bronze wheels which have had a V-shape groove cut into their riding surfaces. Round  $\frac{1}{2}$  in. tubing which are counterbored into a wooden base act as a straight-line guide for these wheels. Troublesome weaves and vibrations are completely eliminated by this new combination of dolly guide wheels and track tubing. The track joints themselves are carefully banded together, eliminating the usual track irregularities.

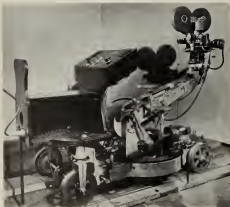


Fig. 1. Automatic dolly.

Presented at Spring, 1946, Technical Conference of Society of Motion Picture Engineers, and published in October, 1946, issue of *ASME JOURNAL*. Reprinted here with special permission of the SMPTE.





Fig. 2 Dolly cam and gear assembly

The power unit which motivates the dolly consists of a  $\frac{3}{4}$  h.p., 110 v d-c motor which has a top speed of 1728 rpm. The shaft of the motor is connected to the speed reducer box by means of a rubber coupling that takes up all motor vibrations as well as start and stop jabs. The speed of the d-c motor is reduced 50 times by the reducer box, and a sprocket gear pulley from it engages the sprocket chain which in turn rotates the dolly axle and houses power wheel. A rheostat governs the speed control, while standard reversing switches determine direction.

Essentially, the same type of power unit has also been installed on the dolly and is applied to the dolly tilt arm so that it may be raised or lowered with ease even when the dolly is in motion. To the rear of the unit, a bank for the dolly operator is provided, together with a control panel which contains switches and controls that govern the speed and movement of both the dolly and the

tilt arm. The control panel also contains dials which show any given position of the dolly and the tilt arm. Once the dolly operator knows the conditions of the shot, he can duplicate these conditions any number of times without fear of error, for any error that he might make would be plainly indicated on the control panel after the shot was completed. Also, additional switches make it possible for the operator to control the entire series of movements by the throwing of a master switch.

The most important mechanism installed on the dolly, however, is the automatic follow-focus device. As stated above, this device was developed and installed because of the great need for accurate and positive focus, particularly on close follow shots where the narrow

depth of field characteristic of photographic lenses as they closely approach a given target demands extremely accurate focusing. The need was of particular importance in special effects work where follow shots are concerned rarely with extremely accurate framing and the extreme proximity of the lens to the object or target. Such examples can be cited on the need to move from a close-up of an individual in hat, neck or eyes, or in some cases, to one eye. Another common case could be cited such as moving up to or away from small sections of maps or titles.

Although this device could be used in many instances in standard set procedure, no intent was made to displace current production methods and it was conceived only for those highly difficult follow shots which are almost impossible to accomplish when the cameraman must depend upon the judgment of the operator or assistant to focus the lens by hand. The automatic focusing of the photographing lens is accomplished in the following manner.

The focus unit receives its activation from the right front dolly wheel (See Fig. 2). It transfers this energy to a cam, which has a cam-follower piece, complementary to the curvilinear action of a two inch lens or of the particular focal length lens desired. This action is applied to a small gear on the end of the shaft of a Selsyn generator motor. The rotation of this motor is transmitted to and received by a Selsyn receiving motor. A small gear, same size as on the generator, is mounted on the end of the receiving motor shaft. This advances a pinion gear, which turns the actual lens gear itself. (See Fig. 3).

There is a distinct advantage in using electrically connected Selsyn or inter-

(Continued on Page 22)



Fig. 3 Dolly lens gear assembly.



Fig. 4 Tilt and dolly stand



## ACES of the CAMERA PEVERELL MARLEY, A.S.C.

By HILDA BLACK

WHEN Pev Marley was graduated from high school he found himself face-to-face with a cross in his life: should he enter Stanford as his parents had always planned, or should he get a job instead. It was no ordinary matter to decide, and wanting their son to enter Stanford was no idle whim on the part of his parents. Leland Stanford had been their friend, and from the day of Pev's birth, it was naturally taken for

granted that when the boy became of university age, he would enter Stanford. There had never been any question about it.

Which would have been fine, except that when young Marley reached that age, he couldn't make up his mind what he wanted to do about his future. Definitely, he didn't want to become a doctor or a lawyer, and the only reason he could find for going to college was to

have fun—football, track, fraternity activities—things like that. Such a program didn't seem to be sufficient excuse for putting in four years' time, figured the sensible lad. And so he decided to get some kind of a job during summer vacation and think the matter over.

By a lucky break, the job he landed was in the motion picture business as an assistant to Al Wyckoff, Cecil deMille's cameraman. All that summer Pev worked hard, as did all aspiring cameramen in those days. Today, for the same amount of work, four men—instead of one—would probably be hired. With practically no help, Pev's chores included: packing, unpacking and transporting 22 cases of camera equipment; setting up three cameras; loading the film in the morning and emptying it at night; holding the slate; keeping a record of the footage. On location he had to take the cameras apart and put them together again; and always there was the little book in which he kept a detailed report of how far what actor was from what camera in a certain scene and what type of lens had been used. These were questions that were sure to come up, and they had to be answered correctly. When a man worked for deMille, he had to be on his toes every minute. The director would not tolerate carelessness or disinterested employees.

In addition to everything else, Marley kept a little notebook of his own, and he still has it, to this day. It is his personal record of what he terms "deMille williams." He thought many of the director's remarks too good to be lost.

That summer's work convinced Pev Marley that he liked the motion picture business. And when schooling rolled around again, he made his decision: instead of going to school and getting an academic education, he would get a practical one. And where, he asked himself, could he get a better understanding of the motion picture industry than with C. R. deMille, the king of them all. Pev says now that he has never regretted his choice, even though, at the time, it did cause near-havoc in his family.

Everybody worked hard in the picture business in those days, and many of the men who are now tops in the profession, started just as Pev did—carrying equipment, taking cameras apart, and putting them together again—and the dozen and one other odd jobs they are called upon to do. It was tough, but it was one certain way to the top. You learned the hard way.

Pev got the benefit of the finest training in the business, for the deMille epics were all made on the grand scale. Marley worked on such majestic productions as "The King of Kings," (which later opened Grauman's Chinese Theater), "The Ten Commandments," "The Volga Boatman" (it opened the Carthay Circle), "Feet of Clay," and "Dynamite" among others.

Perhaps it was his youth, eagerness, ambition and his great respect for the

(Continued on Page 31)

# 1946

*and always — — —*

EXPECT CONTINUANCE

OF

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# SIXTEEN GOES HOLLYWOOD

By RAY FERNSTROM, A. S. C.

**B**EFORE the war, both Technicolor and Cinecolor were blowing up sixteen to thirty-five with results that reached general theatrical distribution. Now were features until Army, Navy and Marine Corps films arrived. Then sixteen grew up. Now it is quite possible that the future will see entire features shot in sixteen for blowup. Several professional cameras are nearly ready for such productions. Due to the enlargement factor necessary, many new features will be added or included in these machines. Amateur color can be enlarged but this is only another example of where only the professional cinematographer and the touch of his art can deliver the quality results demanded by major producers.

Just the other day I viewed the Mitchell Sixteen, a professional's camera which is a midsize Mitchell NC. All the detail of the bigger model is incorporated in this lighter sixteen. A new tripod, equally as rigid as its older brother looks and acts professional. For the last ten years I've used every conceivable model sixteen camera, both in and out of the Army; those made here and abroad. Now at long last we are beginning to get the type of equipment we, the professionals, need before we can consistently deliver

the same color quality photography we are able to do in thirty-five.

Both the Mitchell Sixteen and the new Master, (which I haven't seen) promise the necessary accessories we require. I for one, need a matte box and sunshade with several filter and polar screen holders. Otherwise it is impossible to control overall exposure on a moviepack type film. I use graduated neutral density filters to hold back hot skies. Often a polar screen at the same time to darken the sky and accentuate cloud effects. At the same time Harrison color correcting filters need a holder. The place to correct for color of light is in the camera at time of shooting. This is supplied with the Harrison Color and Kelvin Meter in addition to a good exposure meter. I use a OE because I can read through graduated and polar screens ("SP") and thus balance exposures overall for the scene.

Furthermore, I like a glass (coated preferably) out in front so which I can do transparent color to better effects where there is no actual color in the scene. To use so many pieces of optical glass before a lens I have all lens and filter elements coated here in Hollywood by ACCRA Testcoats. They do a good job of balancing their coating for color,

using a brown tone on one side which is neutralized by blue on the other. After coating surfaces of lenses and filters I suggest that tests be made to compensate your meter to the new speed of your lenses and filter transmission.

The Mitchell Sixteen will have a professional matte box with standard thirty-five lenses and mounts. Follow focus and blimping will be the same simple routine as with thirty-five Mitchells, except for the adapters.

With improved equipment, film, and processes, sixteen will take over a great deal of thirty-five's heavy load of color production both in serious distribution and in thirty-five blowups, especially on foreign and domestic type pictures that will carry crowd and equipment to the far corners of the globe.

Quite a number of sixteen film features have been made and released through sixteen distributing channels and many more are on the way. Several were shot by A.S.C. members which more than anything else proves that sixteen is really "going Hollywood." As more and more A.S.C. men add their professional touches to sixteen the results will dignify the sixteen productions now planned. After all, what difference does the size of film make to a professional photographer of either stills or motion pictures? Sixteen needs A.S.C. men more than workers in any other category.

This is even more apparent when such originals are used in enlargement to thirty-five Technicolor or other processes. The original must be considered as our negative and never viewed as a print. A good original never should look good if screened. Only the dupes or blowup negatives or copies should have the "look" of original Kodachrome or Ansco. To get the necessary result is a matter of tests and more tests, carrying the job through to the print and then screening that. On a recent feature at Menegran, a 3-reel fashion film, I shot all scenes with three different exposures. One for color cutting, one for sixteen dupes and one for Technicolor enlargement to negatives and prints by IB. From this experience I used the resultant blowup technique in shooting Howard Hill sheets at Warners for Technicolor prints in thirty-five.

On these shorts I use the Professional 6.3 Camera that was built by Bell & Howell before the war. It is a professional instrument in all details, but they only built that one camera. It is owned and was developed to it's present stage by Harry McNahan of United States Motion Pictures. He and I shoot "Hollywood Mini-Tours" for blowup in Cinecolor with it. These films are released nationally.

Last week I finished three feature-length sixteen pictures in Kodachrome

(Continued on Page 24)



Ray Fernstrom, A.S.C. with the new Mitchell 16 camera

# Controlled Light for BLACK and WHITE and Color Photography

COLOR photography is the thing, but if it's to be color you must be able to control your light, and you will need Bardwell & McAlister Lighting Equipment for good work.

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of the motion picture industry. It is characteristic of all Bardwell & McAlister lights that they are cool, noiseless and optically correct.

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# REVIEW OF THE FILM NEWS

**M**OST important news of the past month was the formation of United World Pictures by International (Leo Spitz and William Goetz), Universal, and British film tycoon J. Arthur Rank. Deal has potentialities of lifting Universal to position among the top major companies of the business—and at this point—looks like a long-range association of the three participants for very interesting future expansion and progress.

Stripping the formal announcement of the formation to essential facts: United World Pictures will be in closely with Rank's present and future theatre interests in Great Britain, Canada, Australia, France, India, and other countries to give substantial bookings of company releases on a world-wide scale. If eventually necessary to insure playrights and proper showcasing of product in the United States, theatres in key cities may likely be either acquired or constructed. But, from Universal's record of the past five years, and International's healthy key runs recently since its formation two years ago, there seems little need of American theatre trips to insure outlet of future productions.

Spitz-Goetz International Pictures, Inc., which has been producing four top features annually for EKO release, has become inactive; and new International Pictures Corp. is being formed to carry on, with joint ownership of Spitz-Goetz and Universal. New International will produce minimum of eight productions annually; while Rank's British producing units will also contribute the same number of pictures for world release. Added product goes through Universal exchanges in the United States and most of the foreign countries.

## Eventual Universal Control?

Although it was definitely stated that at this time there would be no sale of any stock interest in Universal to either Rank or Spitz-Goetz, some trade observers figure that such a move might eventuate in the near or distant future. Rank already holds a 25% interest in Universal through acquisition of General Film Distributors of England. Later originally participated in the original financing setup which bought Universal from the late Carl Laemmle, sr., for around \$4,000,000 in 1934. If, as might be possible, other financial interests holding large blocks of Universal stock might sell in the next year or so, there is no question but what Spitz-Goetz would pick up such offerings to combine with Rank for operating control of the company.

## Universal's First Combo

It is interesting to note that this is the first time that Universal has par-

ticipated in an amalgamation of any sort in its long and colorful career. Originally launched by Laemmle around 1926, it kept independent through a 35 year career for two periods—(1) the oldest combining company, and (2) never an amalgamation despite the tough going at many points. But the present association with Goetz-Spitz and Rank has many advantages for old U., bringing in plenty of executive and production manpower, talent, strong theatre affiliations world-wide, and top box office talent in the star, director, producer and writer fields. That's why these acquisitions carry potentialities of lifting the Universal structure up among Metro-Goldwyn-Mayer, Paramount, Warners and 20th Century-Fox, within a reasonable time.

## Watch Goetz

Although, on the surface, it would appear that Rank, with his global theatre holdings and financial control of British film producing units, would be the major factor in the United World setup, the key executive appears to be Goetz. The latter has made solid progress in the past 12 years; generating loyalty and enthusiasm of talent and production personnel so necessary for the successful production of motion pictures. Besides his personal abilities, Goetz has the sage advice and counsel of Louis B. Mayer, which cannot be discounted. When it is recalled that Mayer took two unprofitable studios—Metro and Goldwyn—and quickly welded together the greatest producing organization of the industry; his guidance of Goetz' activities is invaluable in numerous ways.

## Television Progress

The more plans for general television broadcasts develop, the closer the new medium veers away from the radio industry into closest contact with motion pictures. Utilization of motion pictures for general television broadcasts rather than live action, seems to be growing in general acceptance within the inner councils of television. During the past few weeks, both Paramount and Disney on the Pacific Coast have applied for television transmitter permits.

Paramount, with a large interest in DuMont, is probing a new angle on theatre broadcasts of current events of national interest. Paul Rablum, an executive assistant to Paramount president Bernay Belinfante, has been exploring the possibilities of televising a national event into the large theatres of the company's circuit, with the receiving houses having camera setup whereby film could be made of the television

broadcast and the exposed film quickly developed in a compact tank for projection on the theatre screen as soon as the main feature or other attraction is completed. The idea has possibilities, as it would overcome the difficulty of a theatre requiring to stop a feature in the middle in order to directly televise an important happening directly onto the screen. According to information at hand, Paramount's television channel would broadcast the picture via a negative image, so that take-off film in the theatre would be a positive and not require additional step of printing.

Disney, in applying for television stations in Los Angeles, San Francisco and San Diego, figures on a long-range proposition which would eventually hook the two together via coaxial cable or some other means. The cartoon producer is figuring on production of films for television broadcasts—with both cartoons and live action—and apparently expects the three coast tele stations to become showhouses for his product made for television advertisers.

## 20mm. for Theatres

For many years, the large producer-distributor companies have ignored the use of 16 mm. release prints for theatrical showings in both this country and abroad. However, the successful Army and Navy circuits entertaining personnel at and behind the far-flung battlefronts, proved to the film officials that the miniature films held great potentialities for theatrical use, especially to expand distribution in the foreign markets where heretofore many smaller communities did not have the power facilities, or could not support, the regulation 35 mm. size.

Major companies, with Loew's International (Metro-Goldwyn-Mayer) in the lead, are planning immediate availability of 16 mm. prints of entertainment features for widespread expansion of showing abroad—Central and South America, Africa, the Near East, and Asia.

In the United States, the distributors have shied away from making the 16 mm. prints available for release. One reason for this attitude is fear that such prints would have to be booked to non-theatrical accounts, with resultant vigorous complaints from the regular exhibitors that competition from the schools, churches, and other locations not classed as theatres, would be detrimental to the regularly-operated showhouses.

But the film companies, recognizing the potentialities of expanding distribu-

(Continued on Page 34)

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# NO CHERRY BLOSSOMS IN A FACTORY

A Discussion on Photographing  
Educational Motion Pictures

By WALTER WISE

*Editor's Note: Mr. Wise is head of TradeFilm, which has been producing both commercial pictures and training films for the armed services during the past six years. The author was previously with major studios as a writer for eight years, and his experience in the two fields of film production qualifies him to compare the mediums.*

**T**HERE is absolutely no doubt about it. In the next few years educational motion pictures are going to provide an increasing source of income to cameramen. There is also no doubt about another point. They are going to earn every dollar they make.

We all know that even in the theatrical field creative camera work does not always receive the recognition or appreciation which it merits. If a cameraman hears some one gush that "Ernstlaude

Schlagentopper looked positively smashing," he can interpret that as the ultimate compliment. Because, despite a slight tendency to nymphomania on Ernstlaude's part, very few people, considering the world's total population, have had a good look at her before Whistles time.

On the credit side of the cameraman's ledger as long as he stays inside the studio he has the art department, make-up men, set dressers and all the related

crafts to help him. He even has the sweeter manufacturers on his side for the benefit of audiences who can count up to two. In a pinch he can even call for a potted palm or a branch of cherry blossoms. But these are no cherry blossoms in a factory and sex appeal is not standard equipment on turret lathes or punch presses. Here the cameraman is on his own, without studio resources, often without adequate lighting facilities. All that he can rely on is his experience and his ability.

At first thought this might seem a harsh analysis or a result caused by conditions which need not exist. But before you reach a final conclusion, consider the conditions for yourself.

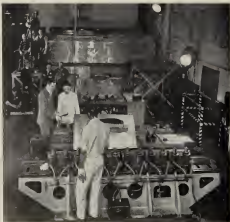
1. Training films should be photographed at the actual scene of action, even in cases where the equipment to be used is small enough to be set up in a studio. The background, the "feel of the shop," is of major importance in training for any skill.

2. In a factory you will seldom find sufficient clearance around your subject to place the number of lights you would like to use.

3. Low budgets are a constant bogey. This is not due to penny pinching on anybody's part. The reverse from training films simply does not permit large production costs.

4. And don't let's forget the little things such as camera-shy workers on the demonstration machine, uneven floors, low ceilings, cramped quarters and trying to make yourself heard above the gentle chorus of a battery of drop hammers.

These are general conditions which apply to training films as a whole. But each new educational picture has its own problems. Speaking now solely from



Cameras and lights must be adapted while space limitations when shooting factory training films. This workshop, in which the subject is instructing a machine operator, gives but more latitude for setup than is generally the case.



(Continued on Page 32)



VICTOR STRAIGHT LINE BEAM MEANS BRIGHTER IMAGE ON THE SCREEN



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## New Lens For B & H Companion 8 Camera

A new 6.5 inch F2.8 lens for the B&H 8 mm. Companion Camera has been designed for the amateur cine-photographer who doesn't care to be bothered with a light meter and F stops.

In addition to the standard F stops another scale has been added. The stationary ring is calibrated into two divisions, "Winter" and "Summer." The movable ring is divided by three lines marked, "Bright," "Hazy," "Dull." An example of its operation is as follows: If the line marked "Dull" is placed opposite the line marked "Winter," the lens diaphragm will be wide open at F2.8. Conversely, if the line marked "Bright" is placed opposite the indication for

"Summer" the lens diaphragm will be at its smallest opening.

This new lens has been developed to dispel the mystery surrounding F stops that excite in numerous amateur minds. Many people who formerly considered home movie-making an intricate art will be impressed with the simple manner of determining correct diaphragm openings. A glance at the sky, a twist of the wrist, the diaphragm is accurately adjusted!

Another innovation is the faster speed of the new lens. Prior to the war, an F3.5 lens was standard equipment on the Filmo Companion Camera. The new speed, F2.8, represents a great improvement.



Self 8.5. Newall Companion 8 with its calibration which provides sure proof focusing-opens for the greatest & this markings are also given for those who prefer the 1000.

## National Carbon Establishes Technical Specialist Group

Expansion of the technical service facilities of National Carbon Co. is effected by establishment of a Technical Specialists group for consultation on more effective and efficient use of lighting carbons for studio and theatre projects.

E. R. Gish will direct overall activities from the company's Cleveland office with Charles W. Handley concentrating solely on west coast studio lighting problems and practices. The previous duties for the company have been delegated elsewhere to allow full time and effort in the studio field. P. D. Ries will headquarter in the east to handle both

studio and theatre lighting contacts, while William C. Kuzmann continues as general representative in the national field.

## Moviola Expansion Plans

Mark Serrurier, after a number of years on the staff of Calderais Institute of Technology during which time he was in charge of structural design for the 200-inch telescope to be installed at Mount Palomar and for the cooperative wind tunnel, has formed Moviola Manufacturing Co. Latter firm will be closely associated with the Moviola Company which is headed by his father, Ivan Serrurier.

## Trego Starts Sports Series in 16 mm.

Charles Trego is producing "Surf Board Rhythms," first of series of sports shorts in 16 mm. at Telefilm Studios. Real depicts intricacies of surf board riding as demonstrated by experts.

## Olsen Co. Handles Commercial Sales on RCA 16 mm. Sound Projectors

Otto K. Olsen Co. of Hollywood has been appointed dealer for commercial sales of RCA's line of 16 mm. sound projectors. Sales and service departments are being organized by Olsen Co. for the RCA equipment.



**National Carbon Company's Technical Specialists**



E. R. GISH  
Cleveland



C. W. HANDLEY  
Pittsburgh



P. D. RIES  
East



W. C. KUZMANN  
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# AMONG THE MOVIE CLUBS

## Brooklyn Amateur Cine Club

Charles Rees, president of Brooklyn Amateur Cine Club, is taking up permanent residence in California, resulting in Francis Sinclair taking over leadership of the organization. Sam Charnate and Irving Scherzer will assist Sinclair in program planning.

Highlight of the November 28th meeting was a lecture and demonstration on film splicing by Sinclair, and film program which included "Junior Does His Bit," by Martin Sternberg; "Home and Dugby Days," by Charles Rasm; "Santitas Easter," by George Seretkyoff; an 8mm. cine film by Mr. and Mrs. Lebowitz; and an outdoor color subject by Jay T. Fox.

Open discussion of the merits of 8mm. in contrast to 16 mm.—or vice versa—provided basis for a most interesting meeting December 5 at the Hotel Rossier, with program conducted by Herbert Erlas. Films presented for the Erlas were "World's Fair" by Sam Fann, and "Dear Fred" by Herbert Erlas, while the Sinatras were championed by "Hobby Fink a Hobby" by Charles Benarise, and "My Bag Plays Cland" by Martin Sternberg.

Frank E. Gunnell delivered informative and instructive talk on "Practical Use of the Various Lenses in Movie Work" at meeting held on Dec. 19th; and several films were also on the program.

## Utah Cine Arts Club

Ted Pope heads Utah Cine Arts Club of Salt Lake City for 1946, as result of recent election which selected other officers as follows: Pete Larson, vice president; Al Landman, treasurer; Lorraine Olson, secretary, and board of director members including George Brumard, Treve Merrill, Ed Madson, and LeRoy Hansen.

December 12th meeting of the club, in addition to refreshments to celebrate the holiday season, presented a fine program of films. Subjects included: "Perpetual Motion," by Nyle Lamm; "Little Co-Ed," by Mr. Al Norrie; "A Man's World," by Mr. and Mrs. LeRoy Hansen; "Shots of Old Mexico," by Ted Pope, and reel of Flowers by Dr. Stromberg of Ogden Movie Club.

Annual banquet will be held at Hotel Newhouse on January 14, at which time program of prize-winning films will be exhibited.

## New York Eight

December meeting of New York Eight Motion Picture Club was held on the 17th at Hotel Pennsylvania, with program including a novelty film by Fred Evans of Hollywood, "Keeping the Bandwagons" by Lewis B. Reed and several new subjects of members.

## Westwood Movie Club

December 8th meeting of Westwood Movie Club, San Francisco, was mainly devoted to election of officers for 1946 Nominating committee, with endorsement of the executive committee, presented slide as follows: president, Fred Harvey; vice president, W. C. Johnson, secretary, Leo M. Kerkhof; treasurer, Larry Daggan.

Evening's program of prize winning pictures comprised "Christmas Well Spent," by J. Allen Thatcher; "My Nantor and I Go A-Bumping," by Donald Day; "The Careless Harrois," by Eric Urmack; "The Water Curel," by Rudy Arben; "Amphibious Attack," by Andy Colner, and "Hail Butch Columbus!" by Leo J. Heffernan.

January meeting on the 25th will be a dinner affair at the Del Mar Restaurant for installation of the new officers.

## Syracuse Movie Makers

This progressive organization is now on the hunt for new permanent quarters for move by February 1st, and until other location is found, corresponding secretary D. Lisle Conway advises that all communications should be addressed to Syracuse Movie Makers Association, 44 West Calhoun Ave., Syracuse 5, New York, N. Y. Present clubrooms are being vacated due to raise in rent which is not justified in view of the restricted space and facilities available for the members.

## Cinema Club, San Francisco

E. L. Sargent has been elected president of the Cinema Club of San Francisco for 1946, succeeding Charles D. Hudson. Other officers selected include: L. J. Daggan, vice president; Rudolph W. Arfsten, secretary; Lloyd Littleton, treasurer; and directors at large, Leon Cagney, Dave Redfield, and Halpern.

Special Christmas dinner meeting was staged for the December meeting on the 18th, with fun generated through contribution of novelty gifts not exceeding two bits in cost for Santa's sack and later presentation to the members present. Appropriate holiday pictures were also shown.

## La Casa Club

D. M. Gardner was chairman of the December 17th meeting of La Casa Movie Club of Alhambra, California. Film program of the evening included several 16mm. subjects: "Natively Seven," by Mrs. R. Gilliland; "A Mountain Garden," by Dr. Elise Schildwacher; "Flip, Spirits and Serts," by Lt. Commander J. A. Biren; and "Mexico, 1945," by Guy Neth.

## Metropolitan

Special Christmas program was presented at the December 20th meeting of Metropolitan Motion Picture Club at Hotel Pennsylvania, with 16mm. black-and-white films shown including: "Hawk Falls," by Frank E. Gunnell; "Reflections," by Henry E. Elmer; and "Snow on the Mountain," by Robert P. Kehos. J. Christian Vogel recited his own composition, "The Tale of a Christmas Tree."

Supplemental meetings of Metropolitan, devoted to discussions of various techniques of cinematography and practices, are finding growing enthusiasm among the members.

Leo Heffernan won first prize of \$75 in Metropolitan's general contest for his "Red Skates Alive." Second prize of \$50 went to George Menzies for "Pondless Peray," while Sidney Morris received third prize of \$25 for "Winter-Jammer."

## L.A. Cinema Club

Annual banquet of Los Angeles Cinema Club will be held Monday night, January 7, at the Los Angeles Breakfast Club to get the organization off to a fine start for 1946 activities. Awards will be announced for winners in the film contest, and the prize-winning subjects will be exhibited.

December meeting was held at the Kibbi Club on December 2nd, with member Harry C. Chapman presenting the film program with two of his color subjects with sound recordings—"Hawaii Calls," and "Canada Holiday."

## Tri-City Cinema Club

Tri-City Cinema Club of Davenport, Rock Island and Moline, held its sixth annual Christmas banquet Friday, December 14th, at Davenport Chamber of Commerce building, with more than 160 members and friends attending.

Program of the evening included short talks by members on interesting or difficult shots experienced in photography; pictures of the past three banquets; and a 16 mm. Kodachrome subject, "Music," which was composed by Harry Lytle and three departments of the Davenport High School.

January meeting of Tri-City will have "Flowers," by Marvin Russell; and "Autumn and Spring," by Miss Georgia T. First Symposium on movie films is also on the program.

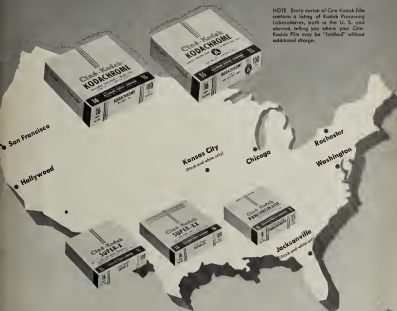
## Color Experts Check Agfa Plant

Group of American film engineers and technicians are currently in Germany checking all phases of manufacture and processing of Agfa color film. Contingent went abroad under wing of Department of Commerce.

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## Automatic Focus Devices

(Continued from Page 9)

lock-type motors to transmit the movement of the dolly to the photographing lens. As can easily be seen, this does not restrict the movement of the camera in any way. The only connection between the receiver motor and lens assembly, and the motor which is actuated by the cam and gear assembly, is a flexible cable containing only the motor wires. Hence, it can be seen that the camera may be tilted up or down or panned to right or left without any hindrance whatsoever.

A standard Mitchell camera is used

on the unit, which is equipped with a 50-mm Bausch & Lomb Biotar, f/1.3 lens in a standard Mitchell lens mount. To the lens mount a ring gear was mounted which is meshed with the control gear of the receiver motor assembly. The 50-mm lens can be focused automatically from 50 feet to 18 inches. Within these limits, no matter where the dolly is moved or at what speed it is moved, the lens is always automatically held in sharp focus.

The benefits derived from this unit are numerous. One advantage of its use has been a great saving in both time and labor. Before the unit was in operation it was necessary to use as many as six men to complete a difficult follow shot. In some instances scenes of this nature required a camera operator, and assistant cameramen to change focus, one or two men to push the dolly, a fifth man to call out footage marks usually marked on the floor, and possibly a sixth man to carry the camera motor cable back and forth as the dolly was moved. As mentioned before, the common practice was to photograph the scene many times hoping that at least one of the "takes" all of the technicians connected with the scene had coordinated and synchronized their operations correctly. This, of course, required a great amount of time, an abnormal waste of film, and usually a crew of from five to six men. With the use of the automatic follow-focus device these disadvantages were eliminated. No matter how difficult the scene, the unit requires the use of only two men—the camera operator and the dolly operator. The only function of the camera operator is to start and stop the camera and to operate the pan and tilt head if this should be necessary. The dolly operator controls the movement of the dolly, and all other necessary operations are performed automatically.

Since the unit has been in use it has been found that there are few occasions where it is necessary to make more than one take of the scene. The saving in film because of this advantage can be recognized at once.

In conjunction with the development of the automatic follow-focus electric camera dolly, a similar device was developed to accomplish the same results on a permanently installed insert and Title Stand (See Fig. 4). In many cases it was found to be more convenient to mount certain signs, titles, and other special objects on a title board which was placed in an upright position and attached to a lathe bed. The camera was mounted on a movable pedestal which in turn was mounted on a smooth runway. This runway was substituted for the original lathe rack and constructed in such a way as to permit the camera to be moved back and forth on it. When the unit was put into use, approximately the same problems presented themselves as before. It was even more difficult to change focus accurately when moving the camera, for

the shots made with this unit usually required a higher degree of accuracy both in focusing and framing. It was necessary to design the equipment in such a manner so as to allow the 3 inch camera lens to approach the title board or target as close as 12 inches.

Because of the complex nature of certain shots, it was also decided that there would be a distinct advantage in being able to move the title board automatically in either a horizontal or vertical direction. To accomplish these features, the unit was reconstructed in the following manner:

The title board part of the installation is made to move in a horizontal and vertical direction by means of two Bodine speed reducer-type animation motors. One of these motors powers the horizontal movement, the other the vertical. The single frame feature permits small precise moves for straight or animation work. The reversing switches provide directional control. The speed adjustments allow speed control for board movements. Both motors are geared down by 12 to 1 reducer boxes. This smooths out the movements and gives proper frame speed. The follow focus is effected by mounting a contour strip, complementary to the linear movement of a three inch rack type of lens along the side of the lathe bed. A small ball-bearing roller makes contact with this contour. A shaft connects the roller bearing to the shaft of a Durhite-type Selyen generator motor via reduction gears. The action of the ball bearing as it follows the contour strip activates the generator which electrically transmits identical turns to the reversing Selyen motor's shaft. On the end of the shaft of this motor, a small gear engages and actuates the rack and pinion gear directly attached to the rack lens mount itself.

In the actual practice of cinematography at the Signal Corps Photographic Center, both of these devices have been used with a great deal of satisfaction by the cinematographers who are charged with the responsibility of making these difficult shots. During peak periods of production they have enabled the Camera Branch to complete many different scenes of this type where formerly it was necessary to complete only a limited number.

It is felt that this dolly with the automatic focus device could be very successfully utilized in television camera operations because of its remote control and pre-set switch features. Another suggested use for this unit would be in connection with rear projection or process photography where it might be advantageous to dolly the projector in and out during a scene.

The writers wish to express their appreciation to the Federal Engineering and Research Laboratory Division and the Central Machine Shop Branch of the Signal Corps Photographic Center for their cooperation and valuable assistance in the design and construction of these devices.

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# FITTING A FILM TO MUSIC

By HAROLD RAWLINSON

SOONER or later the amateur movie maker will feel the urge to make a serious film. I suppose most of us pass through the same school in gaining our experience. Starting with the family-keep-suffering-and-willing models—we progress to a film about our dog and cat, then on to the holiday record at the seaside, the tour with the car, the local sports, the carnival, and, if we are lucky, a record of some historical event like a jubilee or a coronation.

You have probably added other subjects to your personal library of home-made films. In making these subjects we were working along conventional lines most of the time. The structure of the film is more or less established by the sequence of events, but the treatment and the way we handle the subject can be as varied as the pebbles on the beach. In this article I want to suggest a new angle of approaching the making of a film—at least it will be new to the majority of amateur movie makers.

Today, so serious cine enthusiasts would think of showing his silent films without a musical background added by means of gramophone records and amplifiers. Even then, with turntables and a selection of hundreds of records from which to choose, the result will always be a makeshift. Why not, then, make a film to fit a particular piece of music? By doing this there would be tremendous scope for our imagination, and although Walt Disney has shown us how it can be achieved in an animated cartoon ("Fantasia"), the possibilities in the use of straight photography are endless.

Hundreds of musical compositions would lend themselves easily to filmic treatment—and this need not in any way be injurious to the music. Artistically and sympathetically handled, the music will—in most cases—become more interesting to the majority. A few "purists" might object—but these gentlemen may never see your films, so they will not suffer any sleepless nights. Well, then, what about the choice of subject?

Good music will demand a good film. Do not vulgarize a masterpiece by fitting a frivolous idea. First-class poetry requires first-class music—and we must not cheapen another man's work. Decide on the piece of music you are going to illustrate photographically—then let the subject gradually take shape in your mind, blossoming out into a complete film in perfect sympathy and mood with the music. Choose something good, and also high. You very soon tire of poor

music. Remember always that the idea which you are going to put in your film must keep to the rhythm of the music. A slowly unfolding idea cannot be set to music which is full of short phrases and melodies, in this case we should want our music to flow on—unending.

You need not be a practical musician, and knowledge of musical theory and harmony will not be a necessity, although an advantage. As long as you have an artistic feeling and a sense of

the fitness of things the results should be good. Undoubtedly Walt Disney has been the greatest filter of films to music—something quite different from fitting music to films. The progress achieved from some of his early Silly Symphonies to the masterly speedies in "Fantasia" is remarkable. Such works as a Beethoven Symphony and Moussorgsky's "A Night on a Bare Mountain" were not cheapened by being the inspiration of Disney's work.

There have been many beautiful ballets arranged to music which was never intended to be used in a choreographic setting. A Symphony by Haydn, a movement from Mendelssohn's Violin Con-

(Continued on Page 29)

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This article appeared in Nov. 28, 1935 issue of "The British Journal of Photography" and is quoted by permission.

# Using Your Movie Camera As A Motion Picture Step Printer

By JAMES R. OSWALD

Few amateurs are aware that in their own movie camera, whether 8 or 16mm, providing it isn't of the magazine-loading type, they have the facilities not only for making copies of cherished movies, but for making prints from negative films, as well. Without any alterations whatsoever to the camera, it is made to serve as a simplified version of a motion picture step printer, by merely following the few, easy steps outlined here.

The process requires that the two films, the original and the unexposed, be run through the mechanism in contact, and exposed to a light source. The loading operation is carried on in the darkroom, where both films are spooled together on the supply reel, analogous to emulsion, in such a way that, when threaded, the story side of the original will be nearest the lens. Threading is done as usual, with the exception that longer loops are left in the original film, to prevent jamming. Before replacing camera cover, run off a few frames, making sure that the sprockets properly engage both thicknesses of film.

Any length seems up to one-half the capacity of the camera may be handled with one threading.

Exposures may be made either indoors or out, although artificial light is preferred, since it is more uniform, and therefore more easily controlled. An ordinary 7½ or 10 watt lamp placed 8 or 10 inches from the camera, provides plenty of illumination under average circumstances. There are a number of variables that enter into selecting the proper lens stop to use, such as the density of the original film, speed of the unexposed film, operating speed of the camera, and of course, distance from lamp to lens, and intensity of the lamp, itself, and for that reason it is necessary to determine by actual test the proper setting under the conditions with which you will operate. Once these factors are established, however, if they are permitted to remain constant, no difficulty will arise in trying to duplicate results, especially if some sort of a table is set up to use as a guide. For a starting point upon which to conduct first experiments, select a film of normal density,

and use in connection with a medium lens stop.

Outdoors, the camera may be pointed at the blank sky, or aimed toward a clear white card reflecting the direct rays of the sun. As in the case of artificial light, there are a number of things to be taken into consideration here, too, in determining correct exposure, with the addition of the constantly changing conditions encountered in natural light. All this not as a word of discouragement, but rather to forewarn the enthusiast of the pitfalls to avoid.

As to the most suitable type of film to use, generally speaking, the slower the speed, the better. As a rule, most slow emulsions are finer grained, which is very much desirable in movie films, and since motion picture printing doesn't require extreme sensitivity anyway, are ideal from this angle, to say nothing of the economy standpoint.

Perhaps the most economical of all, and certainly the easiest to handle in the darkroom, is the ordinary "positive" type film, for those who can content themselves with black and white pictures, since it is made expressly for laboratory work, and sells for \$1.00 per hundred feet, in 16mm size, not including developing, however. Developing may be done by any one of a number of independent processing laboratories for an additional charge of approximately \$1.00, since, although the film

(Continued on Page 30)



1 (above) The operation is carried on in the darkroom where both films are spooled together on the supply reel, analogous to emulsion in such manner that—when photochemical side of original will be nearest lens (dark colored film represents the original, light colored the unexposed film)

2 (upper right) Look closely and note difference in loop size between the two films. Thread as usual, with exception that longer loops are left in original film, to prevent jamming. Before replacing camera cover, run off few frames to insure sprockets engage both thicknesses of film

3 (right) Exposures may be made either indoors or out, although artificial light, more uniform for easier control, is preferred. Ordinary 7½ or 10 watt lamp 8 or 10 inches from camera provides sufficient illumination on average

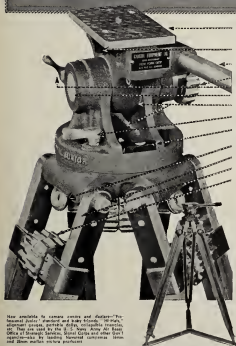




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## Sixteen Goes Hollywood

(Continued from Page 12)

sixteen at Rockett Productions. These were shot with a Cine-Special to which has been added many Hollywood gadgets, such as automatic dissolve mechanism, Mitchell Finder, Magnified image on ground glass for better composing. The results were very good but we needed four hundred foot magazines at various times. On that job we shot everything including special effects and tricks combined with live action, and animation combined with live action, which was accomplished with short lap dissolves giving a very unusual effect. In one sequence a man pants with a dry brush and all the colors of the rainbow flow from it as he pants. Many glass shots combined with live action were used in sixteen color with excellent results.

Sixteen production will undoubtedly grow larger in the major studios in 1946, to supplement their thirty-five standard size. If such films are more released in the United States, many will find eager audiences all over the west of the world. American documentary and propaganda films should certainly be made that the rest of the world might know as better. In exchange we have a tremendous sixteen consumption of foreign films of considerable quality, which opens a new field for the American Professional Cinematographer, especially A.S.C. members who are known to all foreign lands

from their credits on the Hollywood product.

Thirty-five films are limited to theaters, whereas sixteen film has a ready market throughout the world. One has only to look in a few of the many magazines devoted to Industrial, Lecture, School, Business and Advertising films to see the opportunities. My earnest hope is that Hollywood goes as thoroughly far sixteen as sixteen in "GOING HOLLYWOOD."

## Gadget Auctions for Adged Club Interest

That regular gadget auction of the Cincinnati Camera Club, founded in 1884 to date as the oldest photographic group in this country, should give officers and program chairman of amateur cine clubs an idea for incorporation in meeting programs two or three times yearly which can generate plenty of interest among members.

According to an Associated Press story of several weeks ago, the Cincinnati club conducts a gadget auction periodically, with members bringing along discarded or unwanted photographic materials or supplies for bidding by other members. The event has become an integral part of club affairs, and practically every member brings along some piece of photographic material to go on the auction block—and in turn, he picks up something else that he has wanted to try out for a long time.

## NOTES ON SPLICING

By FRANCIS SIMCLAIRE

President, Brooklyn Amateur Cine Club

The process of joining two films together by using film cement is generally believed to be the gluing or cementing together by the use of an adhesive substance. This is incorrect. The film cement actually softens the acetate base of the film and when joined with the other piece under pressure the result is similar to a weld. A perfectly-made splice should be just as strong as the film itself.

There are two methods of removing the emulsion before applying the cement. One is the dry splice and the other the wet splice. For the dry splice the emulsion is removed with a file-like implement which scrapes off the emulsion. With the wet splice, water is used with a suitable scraper to soften and remove the emulsion. The dry splice is more popular and is considered to be superior. The wet method's chief drawback is that it is likely to buckle the film; also the cement will not soften the base properly if too much moisture is present. With the dry splice, care must be taken to see that the file does not cut too deeply, and that the emulsion is removed evenly.

## Frank Gunnell Wins Maxim Award

Frank E. Gunnell, fellow of the Amateur Cinema League and president member of Metropolitan Motion Picture Club of New York, won the Hiram Percy Maxim Memorial Award for 1945. Winning entry was Gunnell's "While the Earth Remains."

## New Filmsound Library Features Announced

NORTH STAR (11 reels)

Samuel Goldwyn's first 16mm release—an epic film of the "little" people of a peaceful Russian village, overrun by ruthless invaders, and the final triumph of right and humanity. (Arne Becker, Dana Andrews, Walter Huston, Ann Harding. Story by Lillian Hellman, directed by Lewis Milestone).

ALLERGIC TO LOVE (Universal) (7 reels)

Romantic comedy with modern scenes that assure countless laughs. Matrimonial and business merger between airplane and motor families perked by comic allgry, finally sealed in very funny surprise ending. (Noah Beery, Jr., Martha O'Driscoll, David Bruce). Available from January 21, 1946 for approved non-theatrical audiences.

CATCHING CROCODILES (10 min.)

Methods of trapping and netting crocodiles. Includes both fresh water and salt water species, nests, eggs. (Produced in Australia).

# New Orthicon Television Tube

(Continued from Page 7)

images from interference due to exploding photo flash bulbs and other sudden bursts of brilliant light.

4. Smaller size of tube, facilitating use of telephoto lens.

5. Type of design that lends itself to use in lightweight, portable television camera equipment.

6. Improved gain control system that provides unvarying transmission, despite wide fluctuations of light and shadow.

## How the Tube Works

Resembling a large tubular flashlight in size and appearance, the advanced development model of the Image Orthicon has an overall length of about 15 inches, with the shank about two inches in diameter and the head about 3 inches in diameter and 3 inches long. It has three main parts: An electron image section, which amplifies the photoelectric current; an improved Orthicon-type scanning section, smaller and simpler than those built before the war; and an electron multiplier section, the function of which is to magnify the relatively weak video signals before transmission.

The principle which makes the new tube super-sensitive to low light levels is similar to that which enables RCA's multiplier phototube to measure starlight. This principle, known as secondary electron emission, involves the use of electrons emitted from a primary source as missiles to bombard a target or a series of targets, known as stages or dynodes, from each of which two or more electrons are emitted for each electron striking it.

Light from the scene being televised is picked up by an optical lens system and focused on the photo-sensitive face of the tube, which emits electrons from each illuminated area in proportion to the intensity of the light striking the area.

Streams of electrons, accelerated by a positive voltage applied to a grid placed directly behind the photo-sensitive face and held on parallel courses by an electromagnetic field, flow from the back of the photo-sensitive face to a target. Secondary emission of electrons from the target, caused by this bombardment, leaves on the target a pattern of varying positive charges which corresponds to the pattern of light from the scene being televised.

The back of the target is coated by a beam of electrons generated by an electron gun in the base of the tube, but the electrons making up this beam are slowed down so that they will stop just short of the target and turn back until again approaches a positively charged section.

The returning beam, with picture information imposed upon it by the varying losses of electrons left behind on the target, is directed at the first of a

series of dynodes near the base of the tube; secondary electrons "kicked out" of this electrode by the bombardment strike a second dynode, and this process continues, with the strength of the signal multiplying at each stage until it reaches the signal plate and is carried out of the tube through an external connection.

**Men Who Developed the Image Orthicon**

Credit for the tube's development goes to three members of the RCA research staff: Dr. Albert Rose, Dr. Paul K. Weener, and Dr. Harold H. Love. The project is a continuation of RCA Laboratories' work on the pick-up tube over the past 20 years under the direction of Dr. V. K. Zworykin, associate director of RCA Laboratories. During part of that period, the work was headed by B. J. Thompson, associate director of the laboratories, who was killed in action overseas in July, 1944, while on a special mission for the Secretary of War.

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## Santa Anita Track Contracts Telefilm

Santa Anita racetrack has signed contracts with Telefilm whereby latter will photograph all of the races via the Telefilm control system as originally used last summer at Hollywood Park. Films in 16 mm size, are shot of every foot of a race from special camera towers spotted around the course and the individual clips are developed and assembled within 10 minutes for photographic viewing of each race by the judges if necessary.

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## Current Assignments of A.S.C. Members

As this issue of AMERICAN CINEMATOGRAHER goes to press, A.S.C. Directors of Photography are assigned to the following feature productions:

### Columbia Studios

Joseph Walker, "The Al Jolson Story" (Technicolor)

Charles Lewton, Jr., "The Walls Came Down" with Lee Remick and Marguerite Chapman

### Mira-Goldwyn-Mayer

Charles Rosher, "The Yearling" (Technicolor), with Gregory Peck and Jane Wyman

Les White, "Army Brat" with "Butch" Jenkins

Ray June, "But Not Goodbye," with Frank Morgan and Keenan Wynn

Charles Salerno, Jr., "Faithful in My Fashion," with Deana Reed, Tom Drake, Edward Everett Horton, and Spring Byington

Rod Wagner, "Fiesta" (Technicolor), with Esther Williams and John Carroll Hal Rossom, "Three Wise Fools," with Margaret O'Brien, Luree Burryness, Lewis Stone, Edward Arnold and Thomas Mitchell

### Monogram Studios

Ben Klum, "Joe Palooka, Champ," with Joe Kirkwood, Elyse Knox, Lene Errel, Joe Louis

William Skinner, "Charlie Chan at Alcatraz," with Sidney Toler

### Paramount

Ray Brenahan, "California" (Technicolor), starring Roy Miland, Barbara Stanwyck, Barry Fitzgerald

Joe Garano, "The Searching Wind," (Hal Wallis Prod.), with Robert Yastig, Sylvia Sydney, Ann Richards

### RKO Studios

Harry Wild, "Till the End of Time," with Dorothy McGuire, Guy Madison, Bob Mitchem, William Gargan, Harry Von Zell

Milton Kramer, "Without Reservations" (Gessie Lasky Prod.), starring Claudette Colbert and John Wayne

Robert De Graess, "Crack-Up," with Pat O'Brien, Claude Trevor, Herbert Marshall and Wally Ford

Tré Teteloff, "Notorious," starring Cary Grant, Ingrid Bergman

George Barnea, "Biker Kenny," with Raymond Russell, Alexander Knox, Dean Jagger

Frank Redman, "Step By Step," with Lawrence Tuery and Anne Jeffreys

### Republic Studios

John Alton, "One Exciting Week," with Al Pearce and Mary Treven

### 20th Century-Fox

Ernest Palmer, "Three Little Girls in Blue" (Technicolor), with June Haver, Vivian Blaine, George Montgomery, Frank Latimore

Harry Jackson, "Strange Triangle," with Signe Hasso, John Sheppard, Annael Shaw

Leon Shamroy, "The Shocking Miss Pilgrimage" (Technicolor), starring Betty Grable and Dick Haynes

Arthur Miller, "Anna and the King of Siam," starring Irene Dunne and Rex Harrison, with Linda Darnell and Gale Sondergaard

Norbert Brodine, "Somewhere in the Night," with John Hodiak, Nancy Guild, Lloyd Nolan, Richard Cate

Joe Macdonald, "The Dark Corner," with Lucille Ball, William Bendix, Mark Stevens, Chifton Webb

Joseph La Shelle, "Clary Brown," with Charles Boyer, Jennifer Jones, Helen Walker, Sir Aubrey Smith

### United Artists

Bob Fittack, "The Six of Harold Diddelshock," with Harold Lloyd, Frances Edwards, Raymond Walburn, Rudy Vallee, Edgar Kennedy

Lucius Andriot, "The Strange Woman," with Hedy Lamarr, George Sanders, Louis Hayward, Gene Lockhart

### Universal

Joseph Valentine, "Genius in the Family" (Storball-Manning Prod.), starring Myrna Loy, Dan Aneches

Woody Bredell, "Notorious Gentleman," with Kent Taylor and Virginia Grey

### Warner Brothers

Sol Polza, "Escape Me Never," starring Errol Flynn and Ida Lupino

Wesley Anderson, "The Banquet With Five Fingers," with Robert Alda, Andrea King, Peter Lorne, J. Carroll Nash

Arthur Edison, "Two Guys From Milwaukee," with Dennis Morgan, Jack Carson, John Leslie, B. Z. Sakall

Ernest Haller, "Humoresque," starring Jean Crawford and John Garfield, with Oscar Levant, Ruth Nelson

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## Fitting Film to Music

[Continued from Page 32]

corta, a Sonata by Liszt, a Symphony by Tchaikovsky, are just a few of the many which come to mind.

There is no reason at all why we should not take a piece of music and build up a photographic picture or story upon its framework.

Here are some practical suggestions which can be taken as some indication of the possibilities of making a film to fit a record:

### Sibelius, Prelude to "The Tempest"

A wonderful piece of pastoral writing. An abstract film fitted to this would be a joy to make.

(Shots) Wind swept trees, bending grasses and scattering leaves, falling branches, swirling smoke. The music paints the picture of a fierce gale, but just before the close of the music the deepest subtleties and there is a most moving picture in tones of the desolation which is left in the wake of the storm. The camera could easily show the pathos of a fallen tree, the limb of an old oak torn from its body by the force of the wind, the limped-up pile of leaves, the damaged gate, and so on.

In a simple way a most moving film could be created to this Sibelius Prelude.

### Bach, Prelude in E-flat Minor

(Vol. 1, No. 8)

This is such a noble piece of music that only the most inspiring subject could be linked with it. A photographic study of a great cathedral—the camera to tell the story as our own eyes would silently take in the beauties of the glorious pile (Do not use any sub-titles during the Prelude)

### Hoegeberg, "Pacific 231"

A picture in sound of an American steam-locomotive. What a magnificent opportunity for someone to add a musical picture to this most stirring rhythmic piece of music.

### Debuss, Summer Night on a River

A most delicate poem in music. Would want very careful treatment; but the camera used imaginatively could produce a delightful film.

### Debuss, Scarf Dance

If you know the masters of a ballet school or dancing class, suggest that you film the students. See that the dance (either the one mentioned above or any other number) is always performed to the gramophone record you are going to use. The turning will then always be the same. (No two performances in the film are ever alike.) Take a number of angle shots and enjoy many hours cutting and editing your film.

### Gounod, Funeral of a Nunn

Have any of your friends get a puppet theatre—or do you have of a local puppet theatre club? If so, there is plenty of scope for your camera.

Saint-Saens, Scherzo from Piano Concerto No. 2

An intriguing number which suggests a number of inquis subjects

### Lieder, Enchanted Lake

I have visualized a film for this magical gem—but it would be very difficult to do without much time and many disappointments.

### Additional Musical Ideas

Here are a few subjects for which appropriate music could easily be found:

The battle of a rush hour in a town

The Saturday market

The movement of water

The village

Trees.

Sandy morning in the park

Water ripples

### Tempe Picture to the Music

Your film will have to have the same tone, balance and climax as the music, and nothing will be more intriguing than figuring this out. The possibilities are, of course, endless.

Having decided on the piece of music which you are going to photographically illustrate, play the record through many times. Get the music right under your skin. Then analyze the music mentally; notice how it changes its tone, mood and color. Possibly the music will be in one characteristic mood throughout. You will have to get this into your picture—perhaps this would be better described as "atmosphere." If it is a 22-inch record it will probably play for 3½ to four minutes, so get together a hundred feet of 16 mm. film (50 ft. of 8 mm.) of any of your old shots joined together. (Every worker will soon have plenty of throw-out footages which can be joined together in any odd way.) Then play the record through while showing your 100 ft. of miscellaneous shots. Make a first rough note as to where the music changes to a different rhythm or to a different melody (all music is built up in some sort of order. Themes are re-

peated and contrasting themes added.) All this should be noted on a chart as a record of the footage. Then, from the scenes noted down, it will be simple to measure the amount of feet or number of frames required for a particular scene. This is a much better method than timing the scene with watch—because as you look on the screen you can easily make a mental note of the change. Jotting down the times on a piece of paper as you look at it which is a difficult job.

Finally, see that you have nice titles. Acknowledge the composer of the music in a subtitle. Explain as much as you can at the beginning. Subtitles in the course of the film will interrupt the flow of the music. Do not start the music until all the titles have been shown. After a little practice at timing the film, you will know just when to gently push the needle (a blue one!) into the first groove.

(Eileen's Note: Those who are music for synchronization with a film are crushed against any public performance of copyrighted musical compositions. According to a representative of American Society of Composers, Authors and Publishers—which controls the licensing for public performance of most popular and classical compositions—numbers on records can be played in conjunction with film at homes or before private groups without incurring copyright violations. However, ASCAP takes the position that any performance of a record for an audience where admission is either direct or indirect, comes under its regulations for licensing. Even reproduction before a movie club comes under copyright performance regulations, according to ASCAP, so that members pay annual dues which are charged as indirect advances for showings.)

### The 3-Purpose Projector

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### Camera as Step Printer

(Continued from Page 34)

is put out by all standard manufacturers, such as Eastman, Ansco, and DuPont, none of these manufacturers undertake to process this particular type film.

Color film should not be attempted to be used until satisfactory results with black and white have been attained. To do so is a costly proposition. Black and white, on the other hand, is not only less expensive, and easier to use, but in those troublesome times, is less scarce than Kodachrome, or the newly introduced Ansco color film. (A plentiful supply of "positive" film will be found almost constantly in dealers' shelves, since it is little in demand by the amateur movie maker.)

Limiting oneself to the use of black and white film doesn't mean that a

(Left) the unique test duplication of a Kodachrome original in Kodachrome film are actual frame enlargements from a Kodachrome duplicate, printed in the camera.

Kodachrome original cannot be used. Naturally if a person is fortunate enough to " snag " a roll of the precious color film, it is much to be preferred over black and white stock, for use with a Kodachrome original, however.

It goes without saying that the utmost precautions must be taken in the darkroom, for therein lies much of the success or failure of the entire venture. Darkroom illumination must be in accordance with the speed of the unexposed film, ranging from the familiar red lamp for use with "positive" film, to total darkness in spoiling Kodachrome. For something different in your field of endeavor, though, try using your movie camera as a motion picture step printer!

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## Aces of the Camera

(Continued from Page 10)

director that caused him to learn so quickly and forge ahead so rapidly. While deMille was looking through the finder, Pev would sit on a little box under the camera. From that position he got "the director's perspective, and hence learned to anticipate what deMille wanted, and did what was required of him. In three and a half years, Marley went from the lowly rank of roustabout to deMille's first cameraman, the youngest first cameraman in the business.

He will never forget his first job after that promotion, or the tension under which he worked. The picture was "Feet of Clay," and there were eight cameras on the job, over 600 extras were working, and the harbor was full of yachts. That was his first scene.

As to the toughest job he ever had to tackle for the screen, Pev thinks that easily goes to the cranefish scene for "The King of Kings." The set, the largest ever constructed, has since been converted into three good-sized stages. Everyone on the set was nervous, and perhaps a little awed by the magnitude of the scene they were shooting, and what it represented. It was not a job to be undertaken casually, or performed haphazardly. "The King of Kings" was the greatest film ever undertaken, and the cameramen across perhaps the most difficult assignment ever handed to any cameraman. Psychologically, as well as technically, it was a tremendous challenge.

The problems were many and varied. H. B. Warner, as The Christ, was held to the cross in a manner which became quite painful after a very short time, and so shooting could only be done a few minutes at a time. Then, there was the difficult job of transition from day exterior to night scene. Keyed to each bit of action, the sky had to change from light sunshine through gathering gloom to heavy storm over a period of two weeks' shooting; this gradual change in the lighting took place. The finale, when the storm was at its peak, included high winds and lightning. The wind machines fulfilled their role in simulating the proper sea-raaging atmosphere, but they stirred up dust. And that dust in the air picked up light. But finally, all of these technical hurdles were mastered, and with the help of a switchboard that he had rigged up, plus an elaborate series of hand and foot gestures he had worked out, Marley was able to get the effects he wanted. To say that they were satisfactory, is an understatement.

With the advent of sound, all cameramen found themselves up against new obstacles. Marley was no exception, and it was he who first used a camera Mute to ensure the camera and deader its voice. That was for the picture "Dynamite."

After making that film, Marley went out for a vacation. But instead of re-

turning to Hollywood after a couple of weeks, as he planned, he found himself taking a flog at the stage, by a curious fluke. As a kid he had won 33 dancing trophies, and when he received an offer to headline in Vanderbilt, the novelty appealed to him and he accepted it. But after a few months, the life of a theatrical performer palled on him, and he headed back for Hollywood, and his own profession.

After free-lancing for awhile, he accepted an offer to work in Paris. He made two pictures there, and two in Budapest, staying in Europe for a year. Marley found the European studios really years behind us, technically, and he introduced many new methods of camera technique, and effected quite a few changes in the laboratory work. He was also the first man to introduce process photography in Europe. Budapest delighted him, he would have stayed longer, but his father was taken suddenly ill and he returned to this country.

After his return, Marley's first job was "The House of Rothschild," for Darryl Zanuck at United Artists. Then, under contract, he went with Zanuck to 20th Century Fox where he worked on such pictures as "In Old Chicago," "Alexander's Ragtime Band," and several others. He also made a screen test for a talented newcomer at that studio, and filmed three of her first pictures. He thought then, and he still thinks, that she as the most beautiful girl he has ever photographed. He didn't marry her though, until after he was in the Army. It was in April 1943, that Linda Darnell became Mrs. Pev Marley.

Not only is she the most beautiful girl in pictures, according to Marley, but she's also a damned good amateur photographer. Better, in fact, than he is. Why? Because he's a professional perfectionist, and for that reason can't relax and take an ordinary, casual snapshot.

Pev's hobbies are fishing, dancing, golf, and swimming. And while he was in the service with the Army Air Force Photographic Unit, he did a lot of flying, and now flying is his latest hobby. Pev enlisted in the army three months before he was classified, and was in about one year. Out of the service, he finished his 20th Century-Fox contract, then moved over to Warner Brothers, where he's made four pictures in rapid succession.

In "Fride of the Marines," there's a scene he's rather proud of, for it combines film shot under three decidedly different conditions, and at different times. Yet it could pass for the same work. Part of the film was actual combat footage taken on Guadalcanal, some of it was shot outdoors on a foggy morning, and the rest was shot indoors on a sound stage.

Pev is happy in his work, and says he would probably make the same choice of a career, if he had it to do over again. He could never be satisfied with a "debit and credit" type of job—his description

of monotony or routine work. This business may offer headaches, and plenty of problems, but it isn't boring, in his opinion. Photography is valuable every hour, and the business produces as versatile a group of people as you'd be likely to find anywhere, he believes.

A good cameraman draws from his past experiences, his artistic ability, his common sense, with a dash of psychology added, and all of it topped off with a sense of humor, is his way of looking at it.

And work? Well, "They are always working on a motion picture set," he says. "When not actually shooting, they are lining up for the next scene. And who are they? Why, the cameramen, of course. Actors and directors get a respite now and then; even grips and electricians get a breather. But the cameramen—never. For they are always busy! But they probably wouldn't change places—even if they could—for any other job in the business."

## Paramount Stages 16 mm. Premiere of 'Duffy's Tavern' in Chicago

Paramount staged a special premiere of "Duffy's Tavern" in Chicago recently for members of the press and radio staff of all places—Duffy's Tavern in the Windy City. Showing was an exploration stunt for the picture; but more important, marked the first time that a studio feature had been premiered in 16 mm. form. Four of Bell & Howell's 179 cameras were utilized for the performance.

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A G I



Director George Marshall, cameraman Bob Hope and Joan Garfield in a pre-walking scene for "Manner of Men" at Paramount. For setting the film, camera and sound men will follow the players on the floor via movement of camera crane. Lionel A. Ulfend, A.S.C., is director of photography on the production.

### Factory Filming

(Continued from Page 16)

my own experience and observation, the only cameraman I have seen do hang-up jobs were those who had the moral courage to subdue their own creative urge and adopt their ability to the problems at hand. Why? Because beautiful pictures alone do not constitute a well-photographed training film.

The film must be subjective, not objective. In other words, the audience should be participants and not merely spectators. To achieve this, good composition must, if necessary, be thrown out the window. If one angle will permit better lighting and another a better participating point of view the conscientious cameraman has no choice. He must be willing to leave his own work open to criticism (by those who don't

know) so as to achieve the main objective.

A demand frequently heard by educational cameramen is, "get the worker's point of view." This sounds easy enough. Place the camera at about the average man's height and have the machine's operator about a little to one side or the other. But rarely does this give the expected result. The reason is that the camera's single eye is stationary whereas the two eyes of the worker are constantly changing position and focus, even though his head, to all appearances, remains stationary. Actually the head is moving constantly in a series of almost imperceptible pans.

Yet I have seen cameraman Jockey Fensel get shots which solved this problem. He carefully figured out the angle which the worker would recognize as the worker's point of view and set up his camera accordingly. I was directing that open and awkward load and long when I saw where he put the camera. But Jockey squawked louder and longer and the results proved that it was fortunate he did so.

On another film, Floyd Crosby, A.S.C., was asked if he could get a "rise, easy long shot" of Lockheed's P-38 assembly line. He looked at his two men, four juncos, three "broads" and three baby spots. He muttered a number of things but all that was audible was a very definite "No!" This caused a one-sided discussion between Floyd and our customer's representative. We've all heard similar discussions, so you won't be surprised that it ended with Floyd making

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the shot while his face went all the colors of the spectrum and a few Dr. Kelman never heard of. The next day we saw the shot in the rushes. It was beautiful. I never figured out how Floyd did it. I am not too convinced that he knows himself.

It is my conviction that in spite of conditions and obstacles, educational films can be photographically beautiful as well as functional. During production the cameraman is the key man. I have a few suggestions which may make it a bit easier for him to fulfill his role.

1. Together with the script writer, director and gaffer, watch the operation you are going to shoot and become familiar with the job you are going to teach via the screen.

2. Determine the amount of lights you will need, remembering that the producer is probably on a short budget. If he is a legitimate producer he won't mind telling you just how much money he has to work with.

3. Read the script and let the writer clarify any points you do not fully grasp.

4. Together with the director, work out complete story sketches for the job. It doesn't matter how rough these sketches are. The main thing is to make them for the whole picture at once and not just for a day's shooting.

5. Where conditions permit plan for daily shots so as to come up close on details of an operation without having to cut from the medium or full establishing shot.

6. Do your diplomatic best to have the factory, or anybody, paint the subject machines. Battleship gray seems the most popular color for best photographic results.

7. If you are working with metal be sure there is plenty of wax on hand to eliminate reflection and halation. Also be certain that the demonstrating worker has plenty of sample pieces to put through his machine during the filming for the several takes which may be necessary. While neither of these points is generally conceded to be the cameraman's responsibility, I think that when shooting begins you'll be mighty glad you checked up on them.

I am only repeating old stuff when I say that educational pictures are going to play an increasingly important part in our national life. They are a challenge to the cameraman's ability. The work is poor in glamour and rich in headaches. But I sincerely believe that any man who has shot a good educational can look in his mirror and say, "Well, guess again, I guess we are a cameraman after all."

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## Review of News

[Continued from Page 34]

tion of features in smaller towns and locations that cannot support the original investment and overhead required for a 35 mm operation, are currently probing the possibilities of utilizing the economical advantages of 16 mm size, but still taking measures to prevent projection of the miniature prints on the present 16 mm machines in private hands.

Best progress has been made on suggestions to use a 28 mm size pinionhole—with the same frame size as the present 16 mm, but with the added 4 mm competing sprocket holes on other side opposite present ones, to provide double sprocket movement for projects which would be made by the manufacturers and sold only to regulation theatres that are expected to be opened for operation under the more economical conditions.

The 20 mm standard proposal is far advanced both in New York and Hollywood. Head offices of the major companies have technical representatives conferring on the matter, while the Academy Research Council in Hollywood is giving the idea a thorough going-over through several of its committees. If the green light is given to the new standard for smaller theatres, many months will elapse before prints will be available, excepting equipment manufacturers will be asked up for the new professional segment; laboratories will have to set up developing apparatus for processing the 20 mm. size; and then the 20 mm. prints will be available for the smaller theatres when sufficient number of the latter are ready for operation to justify making quantities of the prints.

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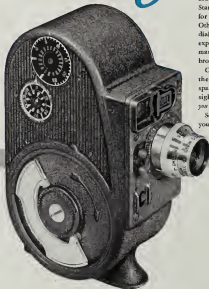
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